

The Examiner rejects claims 1-10 as unpatentable over Clemmings et al., Fletcher et al., or Warren et al.

Applicant's attorney has been informed that Anti-freeze peptides have not yet been applied on a commercial scale. It is submitted that one of the reasons for this is that up till now no guidelines were available for the skilled person whereby Anti-freeze peptides could conveniently be incorporated in foods to result in the desired product properties.

Applicants have found that an advantageous combination of properties can be obtained if the frozen food product contains Anti-freeze peptides and the processing conditions are varied such that the ice crystals in the product have an aspect ratio of more than 1.9. Factors capable of providing the desired aspect ratio are described at page 6, line 37 of the specification and include a combination of rate and temperature of freezing, mobility of the product during freezing, choice of ingredients and nature and amount of Anti-freeze peptides.

Applicants submit that none of the documents cited by the Examiner provide a teaching which would motivate the skilled person to adapt the processing conditions such that an aspect ratio of more than 1.9 is obtained. Clemmings relates to a method for making ice cream for storage, the method does not require a hardening step prior to storage, the method does not require a hardening step prior to storage. Although Clemmings aims at reducing the ice crystal size (see column 2, line 28-29) no indication is given to aim for aspect ratios above 1.9. Clemmings only provides very general guidelines as to methods of producing (see column 3, line 24 etc.) and mentions very broad classes of anti-freeze proteins which can be used (column 2, line 62 etc.) without providing any teaching as to the advantageous nature of the aspect ratios of the ice crystals. Furthermore, the examples of Clemmings appear to provide insufficient

the nature of the anti-freeze protein is not clarified. all in all Clemmings provides no teaching which would motivate the skilled person to come to aspect ratios of more than 1.9.

Fletcher relates to methods for preparation of frozen fermented food products using fish anti-freeze polypeptide expressing micro-organisms. Although Fletcher mentions the advantages of Anti-freeze peptides in the area of inhibition of ice recrystallisation (see e.g... column 2, line 10) again no teaching is provided as to the advantageous nature of compositions with an aspect ration of more than 1.9. Fletcher provides only general guidelines of broad classes of Anti-freeze peptides (see column 4, line 58 etc.) and broad possibilities for processing conditions (column 67, line 21 etc.). Also the examples of Fletcher do not appear to clearly teach which specific anti-freeze protein is to be used (see example 1, which only outlines the general methodology but gives no specific gene sequence for the AFP gene). Therefore, Fletcher does not provide a teaching which would motivate the skilled person to come to aspect ratios of more than 1.9.

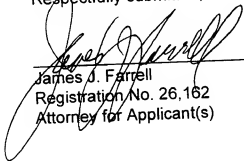
Warren relates to fusion proteins consisting essentially of polypeptide exhibiting ice crystal growth suppression activity. This anti-freeze protein can have a wide variety of compositions. Warren teaches the use of these proteins in frozen food products to suppress ice crystal growth (column 11, line 15-17, and column 11, line 58 etc.). However, Warren does not provide an actual example of processing conditions of how to prepare a frozen food. Moreover, Warren neither teaches nor suggests that the processing conditions in combination with the choice of Anti-freeze peptides should be selected such that the aspect ratio of the ice-crystals is more than 1.9. Therefore, Warren does not provide a teaching which would motivate the skilled person to come to the invention.

Accordingly, the skilled person would, on the basis of Clemmings, Fletcher, and Warren not be motivated to produce frozen food products which on the one hand contain Anti-freeze peptides and which on the other hand have an ice crystal aspect ratio of more than 1.9.

In view of the foregoing amendments and remarks, early favorable action is solicited.

If a telephone conversation would be of assistance in advancing the prosecution of the present application, applicants' undersigned attorney invites the Examiner to telephone at the number provided.

Respectfully submitted,



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